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CLAIMS

We claim:

1. A method of machining comprising the steps of:

milling a surface of a bimetallic material having an aluminum surface and a cast iron surface with a milling cutter having mounted thereon silicon nitride based ceramic cutting inserts.

2. The method according to claim 1 further comprising controlling the speed of the milling to between 2,000 and 10,000 surface feet per minute.

3. The method according to claim 1 further comprising controlling the speed of milling to between 2400 and 6400 sfm.

4. The method according to claim 1 wherein the silicon nitride based ceramic cutting inserts have a Si_3N_4 phase.

5. The method according to claim 1 wherein the silicon nitride based insert has a sialon phase.

6. The method according to claim 1 wherein the silicon nitride based ceramic insert has a beta prime sialon phase.

7. The method according to claim 1 wherein the silicon nitride based ceramic insert also has an alpha prime sialon phase.

8. The method of machining according to claim 1 further comprising controlling the speed of milling to 3,200 surface feet per minute or more.

9. The method according to claim 1 further comprising applying coolant during the milling step.

10. A method of machining the surface of a bimetallic engine block comprising an aluminum alloy having cast iron cylinder liners therein, wherein the method comprises the steps of:

milling said surface with a milling cutter having silicon nitride based ceramic cutting inserts mounted thereon.

11. The method according to claim 10 further comprising controlling the speed of the milling to between 2,000 and 10,000 surface feet per minute.

12. The method according to claim 10 further comprising controlling the speed of milling to between 2400 and 6400 sfm.

13. The method according to claim 10 wherein the silicon nitride based ceramic cutting inserts have a Si_3N_4 phase.

14. The method according to claim 10 wherein the silicon nitride based insert has a sialon phase.

15. The method according to claim 10 wherein the silicon nitride based ceramic insert has a beta prime sialon phase.

16. The method according to claim 10 wherein the silicon nitride based ceramic insert also has an alpha prime sialon phase.

17. The method of machining according to claim 10 further comprising controlling the speed of milling to 3,200 surface feet per minute or more.

18. The method according to claim 10 further comprising applying coolant during the milling step.